

CLAIM LISTING:

1. (Amended) A charging device which charges based on map information without local infrastructure, the charging device comprising:
 - detecting means for detecting position information specifying the position of a moving body;
 - deciding means for determining a charge applicable area in predetermined map information and for determining a buffer area, which is defined by a first boundary line of a charge applicable area and a second boundary line around the first boundary line, located adjacent to the charge applicable area and an area other than the charge applicable area, and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area; and
 - generating means for generating charging information for the moving body based on a result of a decision by the deciding means, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means.
2. (Previously Presented) The charging device according to claim 1, wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means.
3. (Previously Presented) The charging device according to claims 1 or 2, wherein the buffer area is located between the toll area and the non-toll area.
4. (Previously Presented) The charging device according to claim 1, wherein the charge applicable area is formed from at least a plurality of toll areas, and the buffer area is set between adjacent toll areas.
5. (Previously Presented) The charging device according to claim 4, wherein the plurality of toll areas contain toll areas that have different toll systems.

6. (Previously Presented) The charging device according to claim 5, wherein the buffer area is provided for each plurality of toll areas.

7. (Previously Presented) The charging device according to claim 1, wherein a toll for the buffer area is set based on a toll of one of adjacent areas.

8. (Previously Presented) The charging device according to claim 7, wherein a toll for the buffer area is set based on a toll of an area selected from a plurality of areas surrounding the buffer area.

9. (Previously Cancelled)

10. (Previously Presented) The charging device according to claim 1, wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area.

11. (Previously Presented) The charging device according to claim 1, wherein the generating means is provided with storage means for storing a distance traveled in the charge applicable area when the distance traveled bridges a boundary between adjacent areas, and charge information is generated based on the stored distance traveled.

12. (Amended) A charging device which charges based on map information without local infrastructure, the charging device comprising:

host moving body position detecting means for detecting a position of a host moving body;

storage means for storing data useful for determining charges to be rendered including predetermined map information, charge applicable areas, buffer areas, which are defined by a first boundary line of a charge applicable area and a second boundary line around the first boundary line, located adjacent to charge applicable areas and areas other than the charge applicable areas or between different charge applicable areas;

determining means for receiving position information and relating it to map information, and for determining whether or not the moving body has at least entered one of the charge applicable area and the buffer area; and charge processing means for performing



charge processing for a host moving body relating to the charge applicable area based on a result of a determination by the determining means.

13. (Previously Presented) The charging device according to claim 12, wherein the charge processing means performs charge processing using an IC card on which balance information is stored.

14. (Amended) A charging device which charges based on map information without local infrastructure, the charging device comprising:

detecting means for detecting position information defining the position of a moving body;

adding means for defining a buffer area, which is defined by a first boundary line of a charge applicable area and a second boundary line around the first boundary line, in which a moving body may be expected to move to from a detected position based on position information concerning the detected moving body, and adding a predetermined area to the position information;

deciding means for identifying charge applicable areas based on predetermined map information, for matching the position information to the map information, and for deciding an entry state indicating whether or not the moving body has at least entered a charge applicable area based on the charge applicable areas and the buffer area; and

generating means for generating charge information based on a result of a decision by the deciding means

wherein said buffer area is located adjacent to the charge applicable area.

15. (Previously Presented) The charging device according to claim 14, wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means.

16. (Previously Presented) The charging device according to claims 14 or 15, wherein the detecting means detects position information concerning a moving body based on satellite data from a position finding satellite.

17. (Previously Presented) The charging device according to claim 14, wherein the adding means sets the size of a buffer area based on a detection error by the detecting means.

18. (Previously Presented) The charging device according to claim 14, wherein the detecting means includes estimating means for estimating position information concerning a moving body based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body.

19. (Previously Presented) The charging device according to claim 18, wherein the adding means sets the size of a buffer area based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body used in the estimating means.

20. (Previously Presented) The charging device according to claim 14, wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area.

21. (Amended) A charging device which charges based on map information without local infrastructure, the charging device comprising:

detecting means for detecting position information concerning the moving body;
deciding means for determining a charge applicable area in predetermined map information and for setting a buffer area, which is defined by a first boundary line of a charge applicable area and a second boundary line around the first boundary line, located adjacent to the charge applicable area and an area other than the charge applicable area or at a position of a moving body detected by the detecting means, and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area; and

generating means for generating charging information for the moving body based on a result of a decision by the deciding means.

22. (Previously Presented) The charging device according to claim 21, further comprising adding means for determining a buffer area in which a moving body may be expected to move to from position information indicating position of the detected moving body by adding a predetermined area to the position information, and wherein the deciding

means uses the buffer area determined by the adding means when the deciding means is deciding the state of entry.

23-32. (Previously Cancelled)

33. (Amended) A charging device which charges based on map information without local infrastructure, the charging device comprising:

detecting means for detecting position information specifying the position of a moving body;

deciding means for determining a charge applicable area in predetermined map information and for determining a buffer area, which is defined by a first boundary line of a charge applicable area and a second boundary line around the first boundary line, located adjacent to the charge applicable area and an area other than the charge applicable area, and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area; and

generating means for generating charging information for the moving body based on a result of a decision by the deciding means, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prevented so as to prohibit double charging.